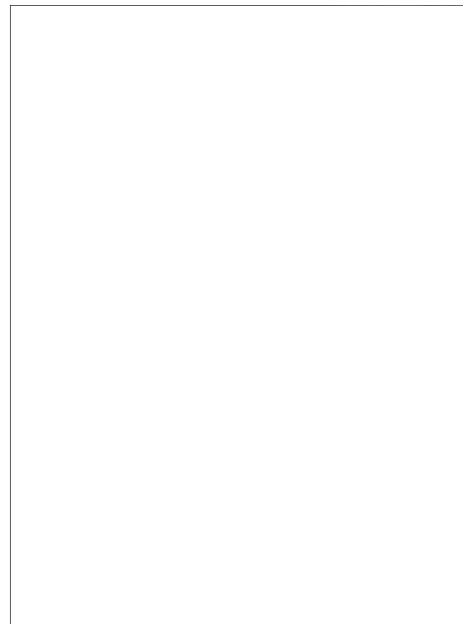


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**NPIC DATA SYSTEM
DATA AND CONTROL SEGMENT
ACQUISITION PHASE**

**VOLUME III
MANAGEMENT PROPOSAL
REVISION**



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31 March 1982

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NPIC DATA SYSTEM
DATA AND CONTROL SEGMENT
ACQUISITION PHASE

VOLUME III
MANAGEMENT PROPOSAL
REVISION



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31 March 1982

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The data in the pages of this proposal where so annotated contains trade secrets and commercial or financial information that are either specifically exempted from disclosure by statute or privileged or confidential within the meaning of the exemption that is set forth in Section 552 (b) (3) and (4), respectively, of the Freedom of Information Act, 5 U.S.C. 552, the disclosure of which could invoke the criminal sanctions of 18 U.S.C. 1905.



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Section 1

INTRODUCTION

The Management Proposal updates to our 24 February 1982 proposal are contained herein. Section 5 has been updated to reflect Development and Test Laboratory equipment and schedule changes. Section 6 has been updated to reflect our revised staffing profile. Section 8 has been replaced to reflect the schedules and staffing profiles for the three options which we are proposing in response to the RFP Amendments.

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Section 2 CORPORATE COMMITMENT

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Section 3

PROJECT MANAGEMENT

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PROGRAM CONTROL

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Section 4 PROGRAM CONTROL

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Section 5 PROJECT PLANS

5.1 Master Schedule

Development and Test Laboratory Schedule -- The details of the equipment that will be installed in the Development and Test Laboratory (DTL) along with schedules are provided in Figure 5.1-1. The major change to the DTL involves the delay of the [redacted] processor installation until March 1983. Our plan is to use an [redacted] processor during initial software development activity, and as development requirements grow we will migrate to the [redacted]

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Figure 5.1-1. Development and Test Laboratory Schedule

PERSONNEL

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Section 6

PERSONNEL

This section is unchanged from the 24 February 1982 proposal.

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Section 7

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ALTERNATE MANAGEMENT
APPROACHES

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Section 8

ALTERNATE MANAGEMENT APPROACHES

We have analyzed our proposed configuration, 14 alternative approaches, and the two Government-directed options. Based on our initial proposal which included three CPU and four terminal variations at IOC we selected three candidate options, including the two Government-directed options specified in the RFP Amendments, for detailed analysis. These three options reduce early year costs and minimize long term technical risk.

We have performed a thorough cost deferral and option analysis based on the following guidance provided:

- a. Reduce early year program cost
- b. Minimize long term technical risk
- c. Consider relaxed BOC and IOC performance
 - 1. 10 minute P&A
 - 2. 3 second response time
 - 3. 0.997 availability
 - 4. 10 minutes restore times

Figure 8.0-1 summarizes the three options and Figure 8.0-2 provides detailed definitions. A complete description is given in Section 10 of the Technical Proposal Revision.

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OPTIONS	OTHER IMPLICATIONS	DELTA COST	
		THRU FY 85	TOTAL
(A) TOTAL <input type="text"/> CONFIGURATION AT IOC GUIDANCE: <ul style="list-style-type: none">• RELAX PERFORMANCE AT BOC/IOC• DELAY FULL CAPABILITY IWS TO FOC• LIMIT TERMINAL COST TO <input type="text"/> THROUGH IOC	<ul style="list-style-type: none">• ONLY BASIC TERMINALS AT IOC• FULL CAPABILITY TERMINALS AT FOC• IOC EXPLOITATION CAPABILITIES DONE ON <input type="text"/> HOST• FOC EXPLOITATION CAPABILITIES DONE AT TERMINAL	-22%	+22%
(B) <input type="text"/> UNIVAC HARDWARE USED AT IOC GUIDANCE: <ul style="list-style-type: none">• SAME AS OPTION A EXCEPT USE UNIVAC 1100/84 FOR EXPLOITATION SUPPORT AT IOC	<ul style="list-style-type: none">• SIMILAR TO OPTION A HOWEVER:<ul style="list-style-type: none">- IOC EXPLOITATION CAPABILITIES UPGRADED ON UNIVAC- FOC EXPLOITATION CAPABILITIES CONVERTED TO IBM HOST & TERMINALS	-25%	+21%
(C) <input type="text"/> UNIVAC HARDWARE USED AT IOC – WITH FUNCTION DEFERRAL ASSUMPTIONS: <ul style="list-style-type: none">• SAME AS OPTION B EXCEPT DEFER BOC/IOC FUNCTIONS	<ul style="list-style-type: none">• USE BOC FUNCTIONAL CAPABILITY THROUGH IOC• AT IOC ADD INTERFACE FUNCTIONAL REQUIREMENTS• DELAY OTHER IOC CAPABILITIES TO FOC	-34%	+18%

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Figure 8.0-1. Option Definitions

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OPTION A

- OUR BOC PROPOSAL (HOST & SOFTWARE) IS UNCHANGED
- AT IOC, FUNCTIONAL CAPABILITY IS SAME AS THAT PROPOSED BUT PERFORMED IN HOST INSTEAD OF LOCALLY AT THE IWS
- AT FOC, RETURN SYSTEM TO PROPOSED FOC CAPABILITY

BOC	IOC	FOC
<ul style="list-style-type: none"> • BOC PROGRAM IS UNCHANGED (SOME P&A SOFTWARE IS DEFERRED) • ADD 278 BASIC IWS's 	<ul style="list-style-type: none"> • INSTALL THIRD [] X HOST • INSTALL IOC HOST SOFTWARE • ADD EXPLOITATION SOFTWARE TO HOST • DELIVER 478 BASIC TERMINALS TO MEET 756 REQUIRED • DEFER ENHANCED AND FULL CAPABILITY IWS 	<ul style="list-style-type: none"> • INTRODUCE ENHANCED AND FULL CAPABILITY IWS <ul style="list-style-type: none"> – 500 FULL CAPABILITY IWS (400 FIELD UPGRADE) – 140 ENHANCED IWS (NEW) – 360 BASIC (IN PLACE) • INSTALL FOC SOFTWARE ON HOST • INSTALL EXPLOITATION SOFTWARE AT LOCAL IWS

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OPTION B

- OUR BOC PROPOSAL (HOST & SOFTWARE) IS UNCHANGED
- AT IOC, IMPLEMENT ALL FUNCTIONAL CAPABILITY IN [] UNIVAC HOST
- AT FOC, RETURN SYSTEM TO PROPOSED FOC CAPABILITY

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BOC	IOC	FOC
<ul style="list-style-type: none"> • BOC PROGRAM IS UNCHANGED (SOME P&A SOFTWARE IS DEFERRED) • ADD 278 BASIC IWS's 	<ul style="list-style-type: none"> • DO NOT INSTALL ANY NEW IOC HOST HARDWARE • ADD IOC SOFTWARE CAPABILITIES TO [] UNIVAC HOSTS • NO ADDITIONAL TERMINALS (USE DELTA DATA's AND BASIC IWS's) • PERFORMANCE REQUIREMENTS RELAXED • DEFER ENHANCED AND FULL CAPABILITY IWS 	<ul style="list-style-type: none"> • INTRODUCE ENHANCED AND FULL CAPABILITY IWS <ul style="list-style-type: none"> – 500 FULL CAPABILITY IWS (NEW) – 140 ENHANCED IWS (NEW) – 360 BASIC IWS (278 IN PLACE) • INSTALL THIRD [] HOST • INSTALL SOFTWARE ON HOST AT LOCAL IWS

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OPTION C

- OUR BOC PROPOSAL HARDWARE CONFIGURATION IS UNCHANGED
- AT IOC, MAXIMUM FUNCTIONAL/PERFORMANCE CAPABILITY IS DEFERRED. STAY ON BOC CONFIGURATION
- AT FOC, RETURN SYSTEM TO PROPOSED FOC CAPABILITY

BOC	IOC	FOC
<ul style="list-style-type: none"> • BOC PROGRAM – INCLUDES SOFTWARE DEFERRALS • ADD 278 BASIC IWS's 	<ul style="list-style-type: none"> • DO NOT INSTALL ANY NEW IOC HOST HARDWARE • SOFTWARE CHANGE LIMITED TO <ul style="list-style-type: none"> – EXTERNAL REQUIREMENTS – INTER SEGMENT REQUIREMENTS • NO ADDITIONAL TERMINALS (USE DELTA DATA's AND BASIC IWS's) • PERFORMANCE REQUIREMENTS RELAXED • DEFER ENHANCED AND FULL CAPABILITY IWS 	<ul style="list-style-type: none"> • INSTALL IOC/FOC CAPABILITIES AS PROPOSED • INTRODUCE ENHANCED AND FULL CAPABILITY IWS <ul style="list-style-type: none"> – 500 FULL CAPABILITY IWS (NEW) – 140 ENHANCED IWS (NEW) – 360 BASIC IWS (278 IN PLACE) • INSTALL THIRD [] HOST • NEW DBMS, QUERY, EXPLOITATION SUPPORT • ADD ALL DEFERRED CAPABILITIES

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Figure 8.0-2. Option Definitions

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Figures 8.0-3, 8.0-4, and 8.0-5 summarize the operational impacts and development implications for the three options. All three options were found to be viable. All options reduce early year (IOC) costs but with an increase to the overall project development cost of 18-22% (see Figure 8.0-6). All options tend to reduce schedule risk due to function and performance deferral. Technical risk is reduced since interim performance objectives have been relaxed. Interim hardware and software upgrades have been deferred in favor of cost. All options increase the size of software development by 2-11%. Our modular CPC1 definition enables implementation of selected functions according to affordability for each of the options.

Sections 8.1, 8.2 and 8.3 describe the Project Plans and personnel staffing affected by Options A, B and C respectively. Our technical approach and management methodology remain the same as proposed in our original February 1982 proposal.

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UNCLASSIFIED**OPERATIONAL IMPACTS**

- All BOC Functional Capabilities are Same as Revised Proposal
- Exploitation Functional Capabilities at IOC are Same as Baseline but Implemented in Host
- Down Loading to IWS is Deferred to FOC
- Terminal Capabilities at IOC Include Basic Word Processing, Text Editing Capability of Burroughs B-20's
- Productivity Improvements associated with Enhanced and Full Capability IWSs are Deferred to FOC
- All External Interface Requirements are Met
- Slight Response Time Degradation over Revised Proposal
 - Average 1.8 Sec
 - Peak 95% 2.6 Sec
- Configuration Availability — No Change

STAT

DEVELOPMENT IMPLICATIONS

- Image IWS Start Delayed Jan 85
- Software Deferrals (New Code)
 - BOC Increment — 14K SLOC
 - IOC Increment — 135K SLOC
 - FOC Increment + 193K SLOC
- Development Schedule Longer
 - BOC & IOC Schedules No Change
 - FOC Schedule — CDR Dec 85 — Segment FOC Jul 87
- Development & Test Facility at Required Through 1/87
- Transition Easier — Data Staging at IOC Implemented in Host
- Risk Slightly Lower — Longer Schedule/More Time for Technical Decisions/And Deferred Development Schedule

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Figure 8.0-3. Option A-Impacts and Implications

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OPERATIONAL IMPACTS

- All BOC Functional Capabilities are Same as Revised Proposal
- Exploitation Functional Capabilities at IOC are Same as in Baseline Proposal but are Implemented in Univac Host
- Down Loading to IWS is Deferred to FOC
- Terminals at IOC are Mixed – Delta Data 5600's and 7260's and Basic IWS's (Simulating DD5600's)
- All External Interface Requirements are met
- More Response Time Degradation over Revised Proposal
 - Average 3.5 Sec
 - Peak 95% 5.6 Sec
- Configuration Availability – Some Interim Impact
 - Extended Use of Mixed Configuration

DEVELOPMENT IMPLICATIONS

- Image IWS Start Delayed to Jan 85
- Software Deferrals (New Code)
 - BOC Increment – 14K SLOC
 - IOC Increment – 161K SLOC
 - FOC Increment + 221K SLOC
- Development Schedules
 - BOC & IOC Schedule No Change
 - FOC Schedule – CDR Dec 85 – Segment FOC Jul 87
- Development & Test Facility Required Through 1/87
- Transition Easier – Data Staging at IOC Implemented in Host
- Risk Slightly Lower – Longer Schedule/More Time for Technical Decisions/Deferred Development Schedule

Figure 8.0-4. Option B-Impacts and Implications

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UNCLASSIFIED**OPERATIONAL IMPACTS**

- At BOC and IOC, Specifically Identified and Agreed to Capabilities will be Deferred
- Exploitation Functions at IOC will be Supported with the Univac Host
- Down Loading to IWS is Deferred to FOC
- Terminals at IOC are Mixed — Delta Data 5600's and 7260's and Basic IWSs (Simulating DD 5600's)
- Productivity Improvements Associated with Enhanced and Full Capability IWS are Deferred to FOC
- All External Interface Requirements are Met
- Response Time Degradation over Baseline
 - Average 4.1
 - Peak 95% 9.8
- Configuration Availability — More Impact
 - Univac 1100/84 Approximately 80-90% Loaded

DEVELOPMENT IMPLICATIONS

- Image IWS Start Delayed to Jan 85
- Very Significant Software Deferrals (New-Code)
 - BOC Increment — 41K SLOC
 - IOC Increment — 243K SLOC
 - FOC Increment + 319K SLOC
- Development Schedules
 - BOC Schedule No Change
 - IOC Schedule — CDR Nov 83 — Segment IOC May 85
 - FOC Schedule — CDR Dec 85 — Segment FOC Jul 87
- Development & Test Facility Required at [] Through 8/87
- Transition Difficulty Same as Baseline — Staging/Down Loading & Full Data Base Implementation all Deferred to FOC
- Risk Slightly Lower — Longer Schedule/More Time for Technical Decisions/Deferred Development Schedule

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Figure 8.0-5. Option C-Impacts and Implications

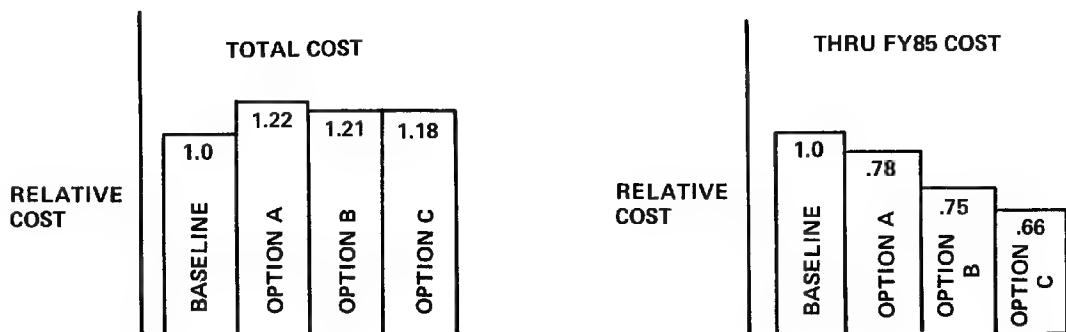
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- ALL OPTIONS INCREASE TOTAL PROGRAM COST
- OPTION C RESULTS IN MAXIMUM COST DEFERRAL AND MINIMUM PROGRAM COST INCREASE
- OPTION A RESULTS IN LARGEST TOTAL PROGRAM COST

Figure 8.0-6. Cost Summary

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8.1 Option A

Option A introduces the Basic IWS at BOC, offers a total configuration at IOC, and delays the full IWS capability until FOC.

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8.1.1 Project Plans

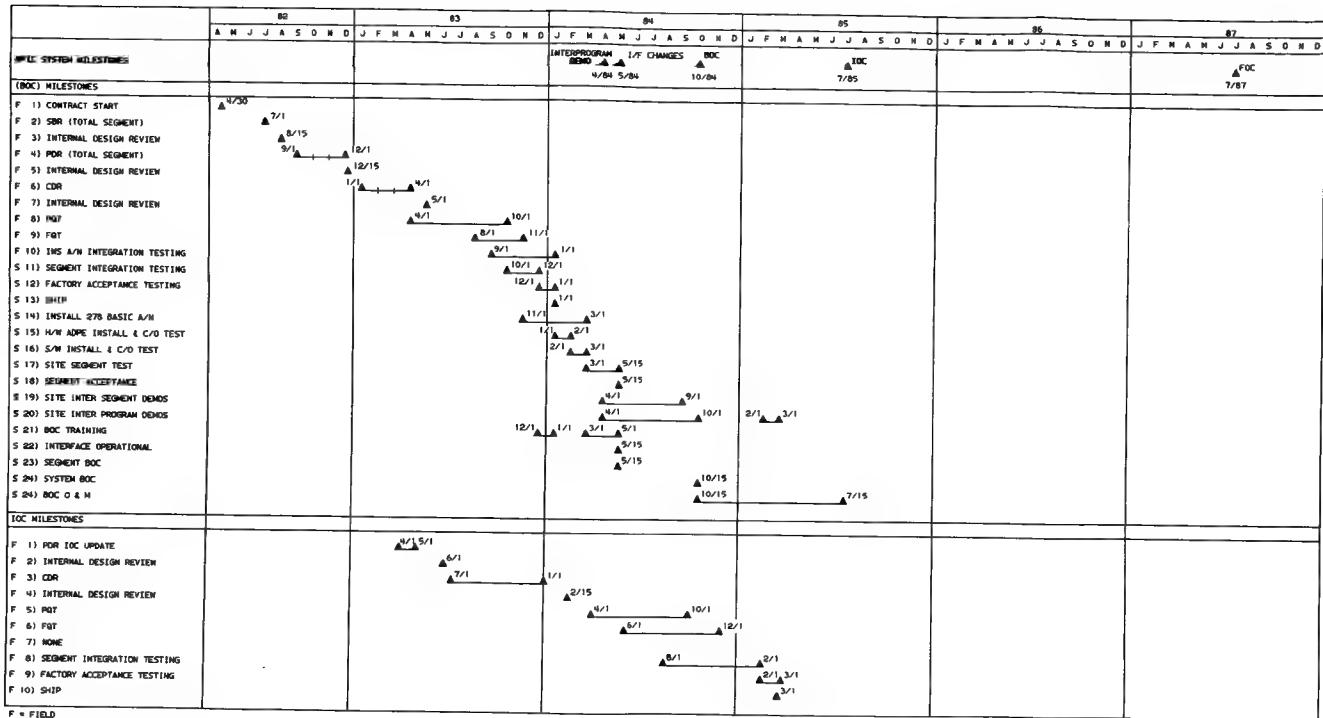
The methodology for planning, controlling, and reporting the activities for each of the options is the same as proposed in the 24 February proposal. The organization and WBS, SOW and CDRL responsibilities remain unchanged.

This section provides the plans for Option A. The Master Schedule is given in Figure 8.1.1-1. Figure 8.1.1-2 reflects the equipment schedule for the Development and Test Laboratory. The thirteen development CPCIs have been resized for the Option A configuration. The four commercial software products will be used in all options. Figure 8.1.1-3 reflects the estimated size of each CPCI along with projections of the source lines of code that will be retained, modified or newly created. We will continue to emphasize the use of existing software in all options. COBOL remains the implementation language. Figure 8.1.1-4 shows the detailed CPCI development schedule. Multiple PDR's and CDR's are again reflected.

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Figure 8.1.1-1. Option A Master Schedule
(Sheet 1 of 2)

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S = SITE
NOTE 1: THIS INVOLVES UPGRADING 140 BASIC TO ENHANCED INS AND UPGRADING 256 BASIC TO FULL CAPABILITY INS.

Figure 8.1.1-1. Option A Master Schedule
(Sheet 2 of 2)

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D/C Segment Development and Test Laboratory Equipment Schedule																											
Location	Equipment	1982				1983				1984				1985				1986				1987					
		1Q	2Q	3Q	4Q																						
	No 1																										
	No. 2																										
	Univac 1100/BX																										
	No. 1																										
	Terminals*																										
	Delta Data 5600																										
	IWS																										
	Switch & Peripherals																										
Government Site	No 2																										
	No 3																										
	Switch & Peripherals																										
	No 1 Univac 1100/84 IWS																										

*Numbers are total number of terminals for the given time frame.

Figure 8.1.1-2. Option A-Development and Test Laboratory Schedule

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Function	CPCI	KSLOC (Thousands of Lines of Executable and Non-Executable Code)																			
		BDC						IOC						FOC							
		UNIVAC			FEP IWS			FEP			IWS			FEP			IWS				
		R	M	N	C	N	N	R	C	M	N	R	M	N	R	C	M	N	R	M	N
MSD Processing Predict and Assign	Pre Exploitation BEPPRE	5.0	4.0	2.2	36.8	86.6			119.4	7.2	1.0					113.6		14.0			
Planning & Requirements Proc. Mgmt. Data Review & Update Topics Maintenance P/S Research & Nominations	Exploitation Management BEMGMT	25.8	3.2	34.2		26.6			29.6	80.0	14.0					75.2					
Workstation Data Staging Exploitation Update Proc. Special Data Requests Cable Support	Exploitation Support BEXSUP	133.7	15.9	15.3					149.0	10.0	32.0					12.0		38.0			
Exploitation Results Output Proc. Exploitation Results Input Proc. Cable Sanitization	Exploitation Results Processing BERESU	21.3	2.5	4.3					25.6							21.3					
Data Utility Functions Interactive Data Maintenance EDB Synchronization	Data Manipulation Programs BMANIP	88.4	9.7	11.0					99.4	8.0						85.7					
Scientific/Statistical Mission Activity Statistics	Statistical Reporting BSTATR	22.5	8	5.9					28.4	1.9						19.9					
Materials Control Maintenance Control Project Mgmt. Support	Materials, Maintenance, & Management BMM/MTG	14.8							14.8	.5						8.0		7.0			
System Command and Control Segment Command and Control Command and Control Reporting	Command and Control BCCNTR				4.0			4.0		20.0						24.0		12.0			
Interactive Query Support Query Format/Analysis/Process COHNE Query Support	Generalized Query BQUERY	38.8	2.8						23.0	15.8						38.8					
OS/Executive/Job Entry TP and Network Support Utilities/Development Supp.	Host System Software BEVSTM	*			*			*								*					
Cable & COINS I/O Interface Private File Support Inter-Processor Transactions Software Download	System-Level Application Support BAPPLS	50.1	4.0	13.1	5.0		5.0	30.0	1.8	22.8						29.5					
File Creation & Maintenance Applications Interface Backup and Restore	Data Base Management System BDBMS1	*			*		*									*					
Global Data Dictionary Interprocessor Data Transfer Data Base Synchronization	Data Management Application Support BDMAPS			3.0		7.6		7.6		8.0						15.8					
Development/Test Support Training Support	Development/Test and Training BTTEDEV	6.1		5.8	30.0		30.0	5.8	8.0							43.0		5.0			
Transmission Control Network Negot/Interface	Front-End System Software PSYSTM					*					*								*		
OS/Executive TP and Network Support User Support	IWS System Software WISYSYM						*					*							*		
Exploitation Support General Interactive Support Collateral Display	Work Station Applications WAFFLE						35					35		141	486.6		78	35	141		

Legend R = Retained
C = Converted
M = Modified
N = New
* = Commercial Products

Figure 8.1.1-3. Option A-CPCI Size Estimates

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CPCI	BCC			IOC		FOC	
	PDR	CDR	PQT	CDR	PQT	CDR	PQT
Pre Exploitation (BEPPRE)	9/82	12/82	3/83-8/83	9/83	3/84	6/85	4/86-8/86
Exploitation Mgmt (BEMGMT)	9/82	2/83	6/83-9/83	8/83	3/84-9/84	-	-
Exploitation Support (BEXSUP)	9/82	1/83	3/83-8/83	7/83	3/84-9/84	7/85	6/86-8/86
Exploitation Results (BERESU)	9/82	1/83	8/83	-	3/84	-	-
Statistical Reporting (BSTATTR)	10/82	3/83	6/83-8/83	10/83	3/89	-	-
Data Manipulation (BMANIP)	9/82	2/83	6/83-9/83	6/83	4/84-6/84	-	-
Materials Mgmt (BMMGMT)	10/82	-	3/83	11/83	7/84	10/85	7/86
Command & Control (BCCNTR)	11/82	3/83	9/83	9/83	3/84	8/85	5/86
Test, Training and Development (BTTDEV)	10/82	1/83	3/83-9/83	9/83	3/84	6/85	4/86
Query (BQUERY)	10/82	2/83	7/83	7/83	3/84	-	-
Date Mgmt Appl. Support (BDMAPS)	10/82	2/83	4/83-8/83	10/83	7/84	-	-
Host Appl. Support (BAPPLS)	9/82	11/82	3/83-7/83	8/83	6/84-8/84	-	-
IWS Applications (WAPPLS)	11/82	3/83	9/83	-	-	6/85	6/86-9/86

BSYSTEM, BDBMS1, FSYSTEM, WSYSTEM are commercial products.

Figure 8.1.1-4. Option A-CPCI Development Plan

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8.1.2 Personnel

We project a staffing requirement of 148 personnel for Option A at contract start. Figure 8.1.2-1 shows the staffing profile.

All options include the same Key Personnel identified in Section 6.1 of the Baseline Proposal and all personnel are dedicated 100% to this project with the exception of Development and Test Facility support personnel as noted in our 24 February 1982 proposal.

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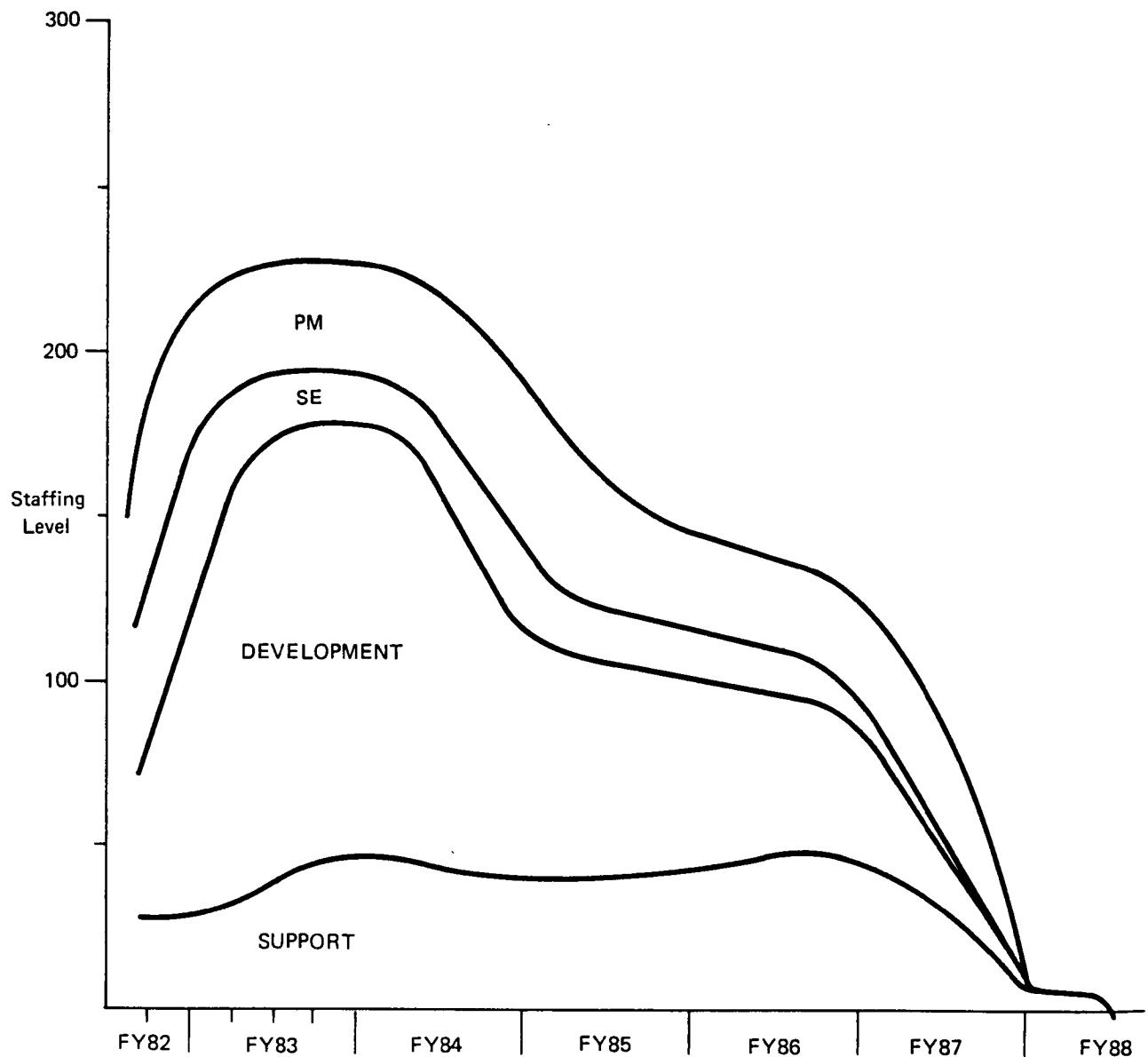


Figure 8.1.2-1. Option A-Staffing Profile

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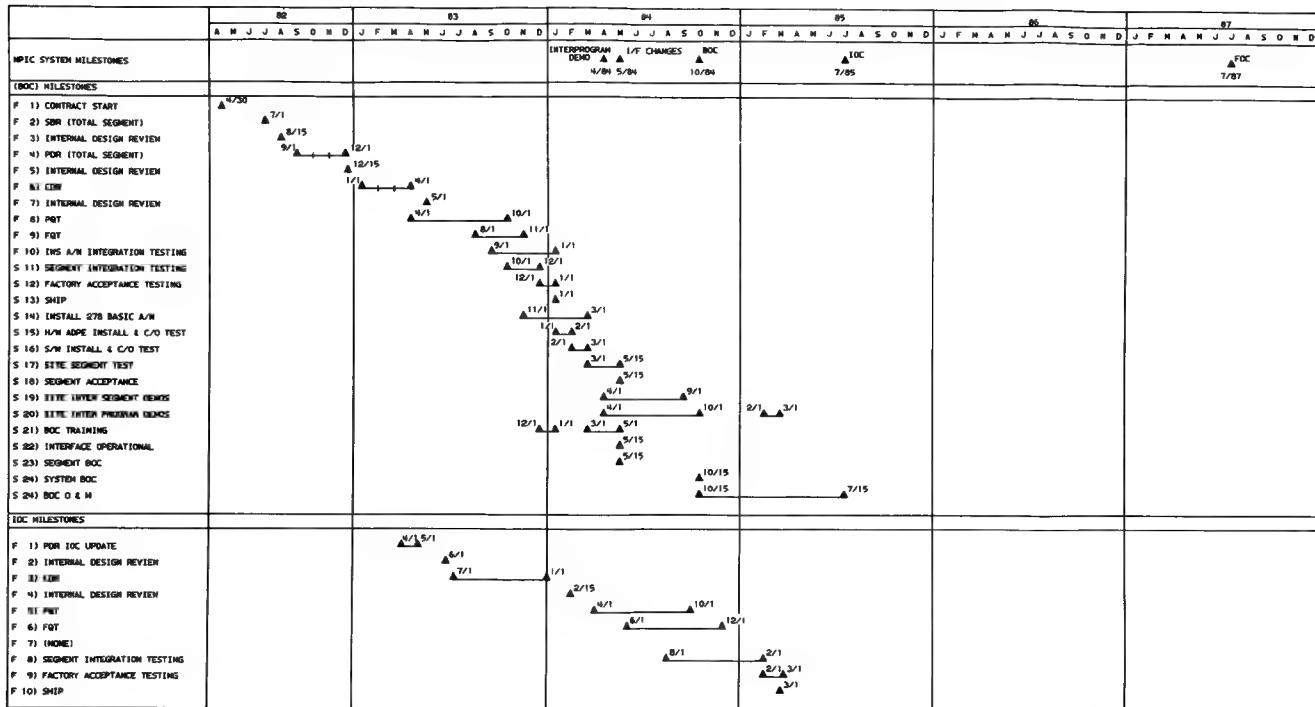
8.2 Option B

Option B, like Option A, introduces the Basic IWS at BOC and delays the full IWS capability until FOC but, unlike A, it retains the BOC configuration through IOC.

8.2.1 Project Plans

This section provides the Option B specific plans. The Master Schedule is given in Figure 8.2.1-1. The equipment schedule for the Development and Test Laboratory is given in Figure 8.2.1-2. The CPCIs have been resized for the Option B configuration and are given in Figure 8.2.1-3. Figure 8.2.1-4 is a detailed CPCI development schedule. Methodologies, techniques, organization, and responsibilities are unchanged from the 24 February 1982 proposal.

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Figure 8.2.1-1. Option B Master Schedule
(Sheet 1 of 2)

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	82	83	84	85	86	87
	A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
HPIC SYSTEM MILESTONES			INTERPROGRAM DEMO ▲ ▲ 4/8 5/84	T/F CHANGES ▲ 10/84	LOC 7/85	
(IOC MILESTONES (CONT.))						FOC 7/87
S 11) (NONE)						
S 12) (NONE)						
S 13) S/A INSTALL & C/D TEST						
S 14) SITE SEGMENT TEST						
S 15) SEGMENT ACCEPTANCE						
S 16) SITE INTER SEGMENT DEMOS						
S 17) SITE INTER PROGRAM DEMOS						
S 18) IOC TRAINING						
S 19) SEGMENT IOC						
S 20) SYSTEM IOC						
S 21) IOC D & M						
FOC MILESTONES						
F 1) POR FOC UPDATE						
F 2) INTERNAL DESIGN REVIEW						
F 3) CDR						
F 4) INTERNAL DESIGN REVIEW						
F 5) PRT						
F 6) PRT						
F 7) SEGMENT INTEGRATION TESTING						
F 8) FACTORY ACCEPTANCE TESTING						
F 9) SHIP						
S 10) INITIAL IOC DESIGN (NO ENHANCED), S 11) FULL CAPABILITY IOC						
S 12) INSTALL & C/D TEST						
S 13) SITE SEGMENT TEST						
S 14) SEGMENT ACCEPTANCE						
S 15) SITE INTER SEGMENT DEMOS						
S 16) IOC TRAINING						
S 17) SEGMENT FOC						
S 18) SYSTEM FOC						
S 19) FOC D & M						

Figure 8.2.1-1. Option B Master Schedule
(Sheet 2 of 2)

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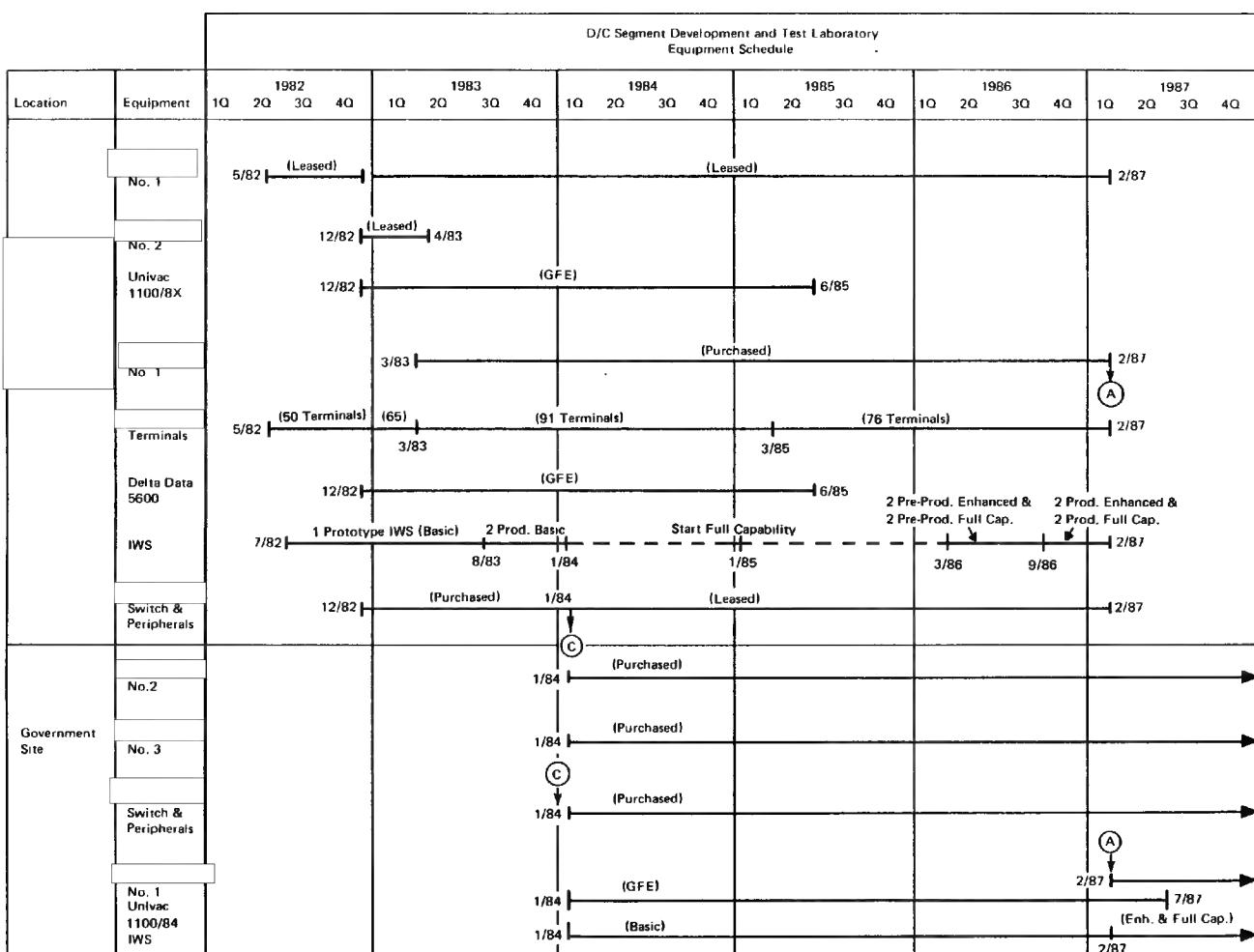


Figure 8.2.1-2. Option B-Development and Test Laboratory Schedule

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Functions	CPCI	KSLOC (Thousands of Lines of Exec KSLOC (Thousands of Lines of Executable and Non-Executable Code)												FOC												
		SOC						IOC						FOC						FOC						
		UNIVAC	UNIVAC	UNIVAC	UNIVAC	UNIVAC	UNIVAC	R	C	M	N	R	M	N	R	C	M	N	R	M	N	R	C	M	N	
MSD Processing Product and Assign	Pre-Exploitation BEPPRE	5.0	4.0	2.2	36.0	86.0		7.2				119.4											105.4	2.2		15.0
Planning & Requirements Proc. Mgmt. Data Review & Update Topics Maintenance P/S Research & Nominations	Exploitation Management BEMGMT	25.8	3.2	34.2		28.6		60.0	2.0	14.0		29.8											18.0	57.2		
Workstation Data Staging Exploitation Update Proc. Special Data Requests Cable Support	Exploitation Support BEXSUP	133.7	15.0	15.3				149.0	4.0	32.0													10.0		40.0	
Exploitation Results Output Proc. Exploitation Results Input Proc. Cable Sanitization	Exploitation Results Processing BERESU	21.3	2.5	4.3				25.6															21.3			
Data Utility Functions Interactive Data Maintenance EDB Synchronization	Data Manipulation Programs BMANIP	88.4	9.7	11.0				99.4	1.0	6.0													85.7			
Scientific Statistics Mission Activity Statistics	Statistical Reporting BSTATR	22.5	.6	5.9				28.4		1.9													19.0			
Materials Control Maintenance Control Project Mgmt. Support	Materials, Maintenance, & Management BMMGMT	14.8						14.8		.5													8.0		7.0	
System Command and Control Segment Command and Control Command and Control Reporting	Command and Control BCCNTR					4.0					4.0		20.0										24.0		12.0	
Interactive Query Support Query Format/Analyze/Process COINS Query Support	Generalized Query BQUERY	39.8	2.8					39.8	1.0														23.0	15.8		
OS/Executive/Job Entry TP and Network Support Utilities/Development Supp.	Host System Software BSYSTEM	*			*			*			*												*			
Cable & COINS I/O Interface Private File Support Inter-Processor Transactions Network Thimbles	System-Level Application Support BAPPLS	50.1	4.0	13.1		5.0		63.2		5.0		1.5	22.0										28.6		.9	
File Creation & Maintenance Applications Interface Backup and Restore	Data Base Management System BDBMS1	*			-			*			*												*			
Global Data Dictionary Interprocessor Data Transfer Data Base Synchronization	Data Management Application Support BDMAPS			3.0		7.6		3.0	1.0	7.6												7.6		8.0		
Development/Test Support Training Support	Development/Test and Training BTTDEV	6.1		5.0		30.0		11.1		30.0		8.0										38.0	5.0	5.0		
Transmission Control Network Mgmt/Interface	Front End System Software FEYSYM					*		*																	*	
OS/Executive TP and Network Support User Support	IWS System Software WSYSTEM					*		*																	*	
Exploitation Support General Interactive Support Collateral Display	Work Station Application WAPPLS					35																35				

Legend: R = Retained C = Converted
M = Modified * = Commercial Products
N = New

Figure 8.2.1-3. Option B-CPCI Size Estimates

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CPCI	BOC			IOC		FOC	
	PDR	CDR	PQT	CDR	PQT	CDR	PQT
Pre Exploitation (BEPPRE)	9/82	12/82	3/84-8/83	-	-	6/85	4/86-6/86
Exploitation Mgmt (BEMGMT)	9/82	2/83	6/83-9/83	8/83	3/84-9/84	6/85	6/86
Exploitation Support (BEXSUP)	9/82	1/83	3/83-8/83	7/83	3/84-9/84	7/85	6/86-8/86
Exploitation Results (BERESU)	9/82	1/83	8/83	-	-	7/85	9/86
Statistica; Reporting (BSTATTR)	10/82	3/83	6/83-8/83	10/83	3/84	7/85	9/86
Data Manipulation (BMANIP)	9/82	2/83	6/83-9/83	6/83	4/84-6/84	7/85	7/86-9/86
Materials Mgmt (BMMMGMT)	10/82	-	3/83	11/83	7/84	10/85	7/86
Command & Control (BCCNTR)	11/82	3/83	9/83	9/83	3/84	8/85	5/86
Test, Training and Development (BTTDEV)	10/82	1/83	3/83-9/83	9/83	3/84	6/85	4/86
Query (BQUERY)	10/82	2/83	7/83	7/83	3/84	8/85	7/86-8/86
Data Mgmt Appl. Support (BDMAPS)	10/82	2/83	4/83-8/83	10/83	7/84	7/85	6/86
Host Appl. Support (BAPPLS)	9/82	11/82	3/83-7/83	8/83	6/84-8/84	6/85	7/86
IWS Applications (WAPPLS)	11/82	3/83	9/83	-	-	6/85	6/86-9/86
BSYSTM, BDBMS1, FSYSTM, WSYSTM are commercial products.							

Figure 8.2.1-4. Option B-CPCI Development Plan

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8.2.2 Personnel

Option B staffing profile is shown in Figure 8.2.2-1. At contract start a staff requirement of 152 personnel is projected.

All options include the same Key Personnel identified in Section 6.1 of the Baseline Proposal and all personnel are dedicated 100% to this project with the exception of Development and Test Facility support personnel as noted in our 24 February 1982 proposal.

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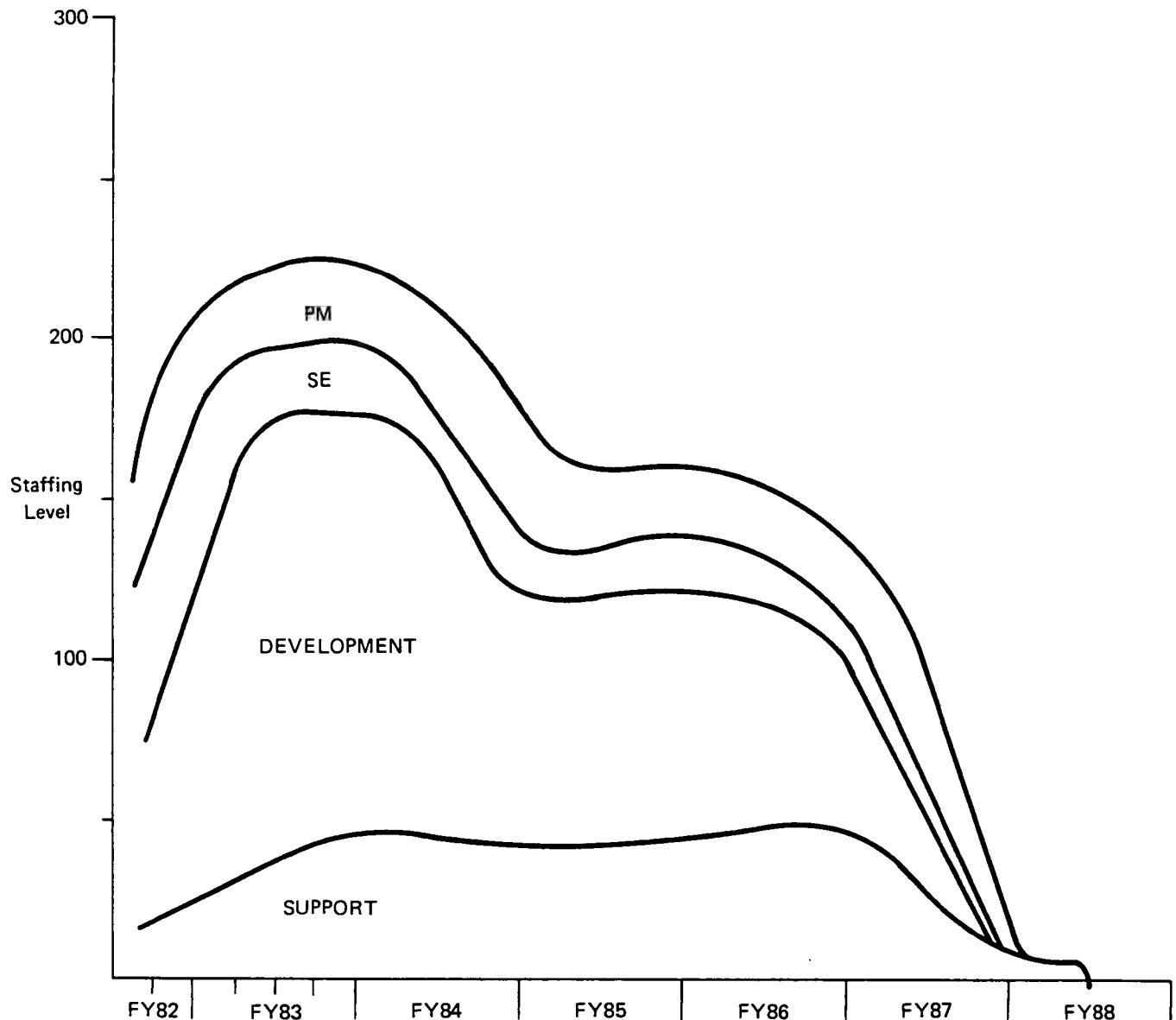


Figure 8.2.2-1. Option B-Staffing Profile

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8.3 Option C

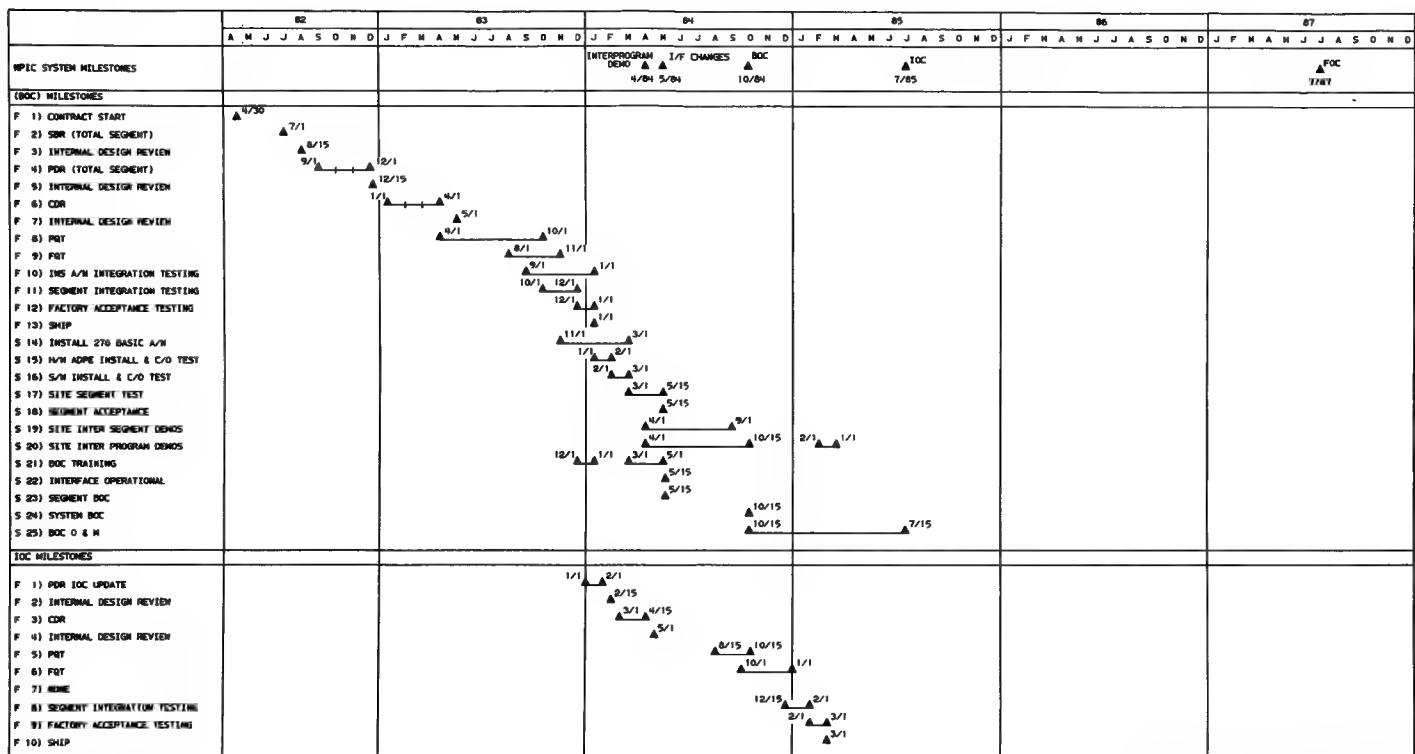
Option C is the same as Option B (Basic IWS at BOC, BOC configuration through IOC, full IWS capability at FOC) except that all non-externally driven functions are deferred until FOC.

8.3.1 Project Plans

This section provides the Option C specific plans. Figure 8.3.1-1 shows the Option C Master Schedule. Figure 8.3.1-2 gives the equipment schedule for the Development and Test Laboratory. Figures 8.3.1-3 and 8.3.1-4 show the CPCI code estimates and the detailed CPCI development schedule. As in all of the options, the methodologies, techniques, organization and responsibilities are the same as stated in the 24 February 1982 proposal.

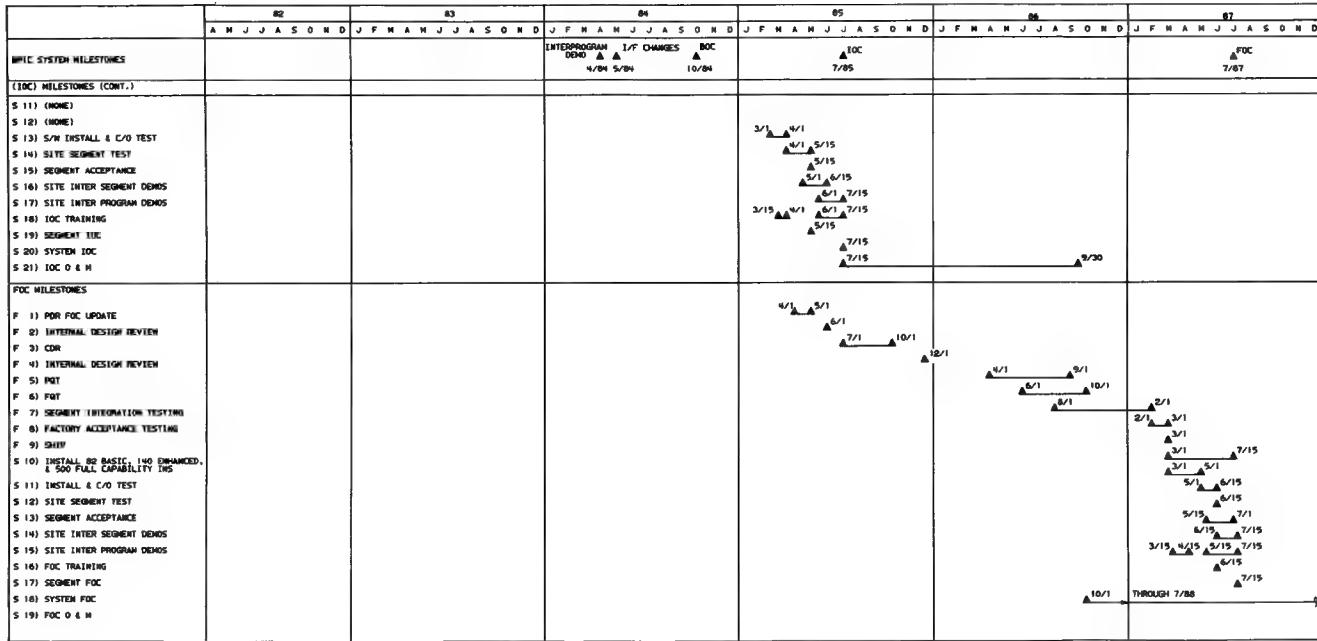
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F = FIELD
S = SITEFigure 8.3.1-1. Option C Master Schedule
(Sheet 1 of 2)

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Figure 8.3.1-1. Option C Master Schedule
(Sheet 2 of 2)

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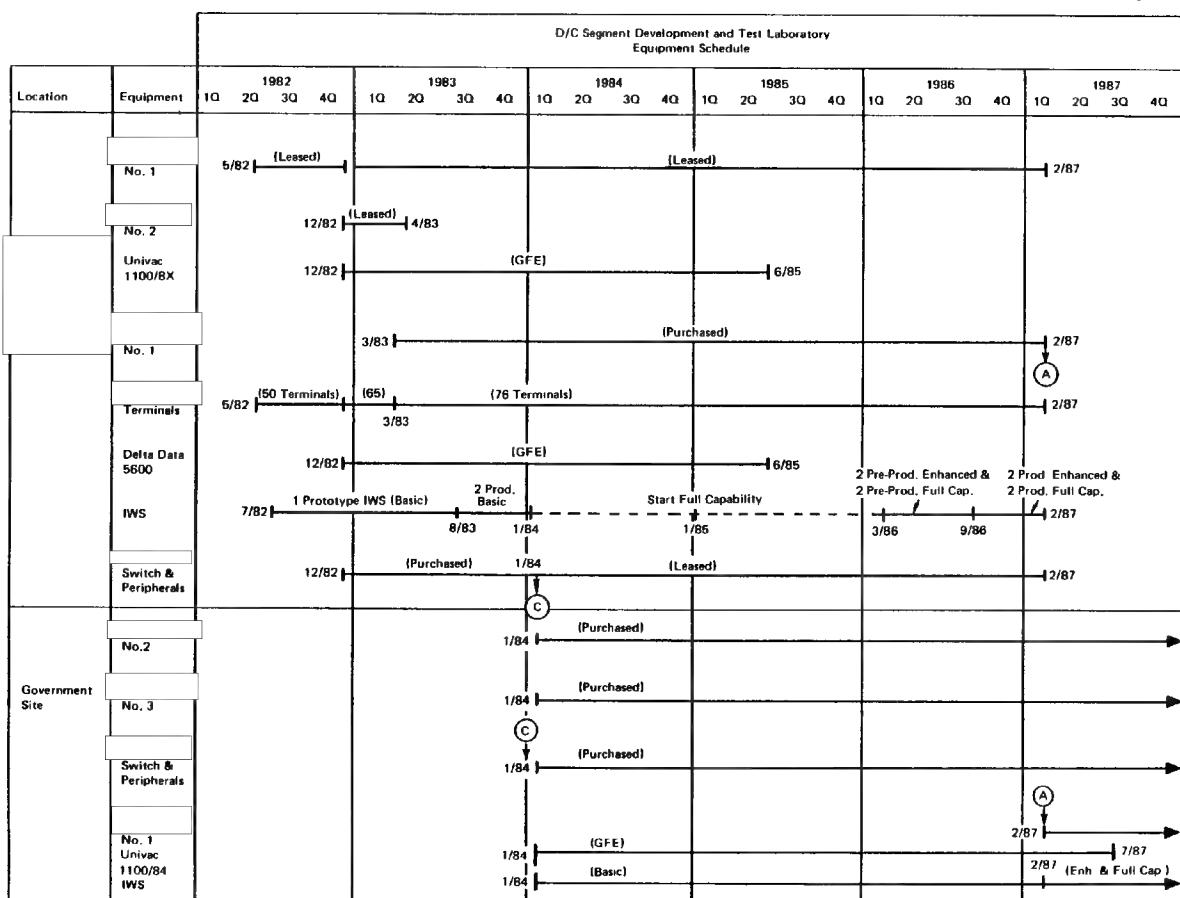


Figure 8.3.1-2. Option C-Development and Test Laboratory Schedule

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Functions	CPCI	KSLOC (Thousands of Lines of Executable and Non-Executable Code)																								
		BOC						IOC						FOC												
		UNIVAC	R	M	N	C	N	UNIVAC	R	M	N	R	C	M	N	R	M	N	UNIVAC	R	C	M	N	R	M	N
MSD Processing Predict and Assign	Pre-Exploitation BEPPRE	5.0	4.0	2.2	36.8	81.8			7.2			114.4							106.4	7.2		20.0				
Planning & Requirements Proc. Mgmt. Data Review & Update Topics Maintenance P/S Research & Nominations	Exploitation Management BEMGMT	25.8	3.2	34.2		29.8			60.0			29.8							29.8	31.8		14.0				
Workstation Data Staging Exploitation Update Proc. Special Data Requests Cable Support	Exploitation Support BEKSUP	133.7	15.8	11.3					145.0		16.0									2.0		48.0				
Exploitation Results Output Proc. Exploitation Results Input Proc. Cable Sanitization	Exploitation Results Processing BERESU	21.3	2.5	4.3					25.6											21.3						
Data Utility Functions Interactive Data Maintenance EDB Synchronization	Data Manipulation Programs BMANIP	88.4	9.7	1.0					89.4		6.0									72.7	13.0					
Scientific Statistics Mission Activity Statistics	Statistical Reporting BSTATR	22.5	.6	5.9					28.4											18.0	1.0					
Materials Control Maintenance Control Project Mgmt. Support	Materials, Maintenance, & Management BMMMGMT	14.8							14.8											7.5	7.5					
System Command and Control Segment Command and Control Command and Control Reporting	Command and Control BCONT					4.0					4.0								4.0		32.0					
Interactive Query Support Query Formatted/Analyze/Process COINS Query Support	Generalized Query BQUERY	38.8	2.8						39.8											23.0	15.8					
OS/Executive/Job Entry TP and Network Support Utilities/Development Supp.	Host System Software BSYSTEM	*				*			*			*								*						
Cable & COINS I/O Interface Private File Support Inter-Processor Transactions Software Documented	System-Level Application Support BAPPLS	50.1	4.0	13.1		6.0			63.2		6.0								5.0	1.5	22.9					
File Creation & Maintenance Applications Interface Backup and Restore	Data Base Management System BDBMSI	*				*			*			*							*							
Global Data Dictionary Interprocessor Data Transfer Data Base Synchronization	Data Management Application Support BDMAPS				3.0		7.6		3.0		7.6								7.6		8.0					
Development/Test Support: Training Support	Development/Test and Training BTTEST	8.1	5.0		22.0				11.1		22.0								22.0	7.0	19.0					
Transmission Control Network Mgmt/Interface	Front-End System Software FSYSTEM								*																	
OS/Executive TP and Network Support User Support	IWS System Software WISYSTEM								*										*							
Exploitation Support General Interactive Support Collateral Displays	Work Station Applications WAPPLS								35									35					35		141	

Legend: R - Retained C - Converted
M - Modified * - Commercial Products
N - New

Figure 8.3.1-3. Option C-CPCI Size Estimates

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CPCI	BOC			IOC		FOC	
	PDR	CDR	PQT	CDR	PQT	CDR	PQT
Pre Exploitation (BEPPRE)	9/82	12/82	3/83-8/83	-	-	7/85	5/86-6/86
Exploitation Mgmt (BEMGMT)	9/82	2/83	6/83-9/83	-	-	8/85	6/86-7/86
Exploitation Support (BEXSUP)	9/82	1/83	3/83-8/83	4/84	8/84-10/84	9/85	6/86-9/86
Exploitation Results (BERESU)	9/82	1/83	8/83	-	-	10/85	8/86
Statistical Reporting (BSTATTR)	10/82	3/83	6/83-8/83	-	-	10/85	8/86
Data Manipulation (BMANIP)	9/82	2/83	6/83-9/83	-	-	9/85	8/86-10/86
Materials Mgmt (BMMMGMT)	10/82	-	3/83	-	-	1/86	9/86
Command & Control (BCCNTR)	11/82	3/83	9/83	-	-	12/85	7/86-9/86
Test, Training and Development (BTTDEV)	10/82	1/83	3/83-9/83	-	-	8/85	6/86-9/86
Query (BQUERY)	10/82	2/83	7/83	-	-	11/85	7/86-9/86
Data Mgmt Appl. Support (BDMAPS)	10/82	2/83	4/83-8/83	-	-	10/85	5/86
Host Appl. Support (BAPPLS)	9/82	11/82	3/83-7/83	-	-	9/85	4/86-6/86
IWS Applications (WAPPLS)	11/82	3/83	9/83	-	-	7/85	4/86-10/86

BSYSTM, BDBMS1, FSYSTM, WSYSTM are commercial products.

Figure 8.3.1-4. Option C-CPCI Development Plan

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8.3.2 Personnel

Figure 8.3.2-1 shows the staffing profile for Option C. We project a staffing requirements of 149 personnel at contract start.

All options include the same Key Personnel identified in Section 6.1 of the Baseline Proposal and all personnel are dedicated 100% to this project with the exception of Development and Test Facility support personnel as noted in our 24 February 1982 proposal.

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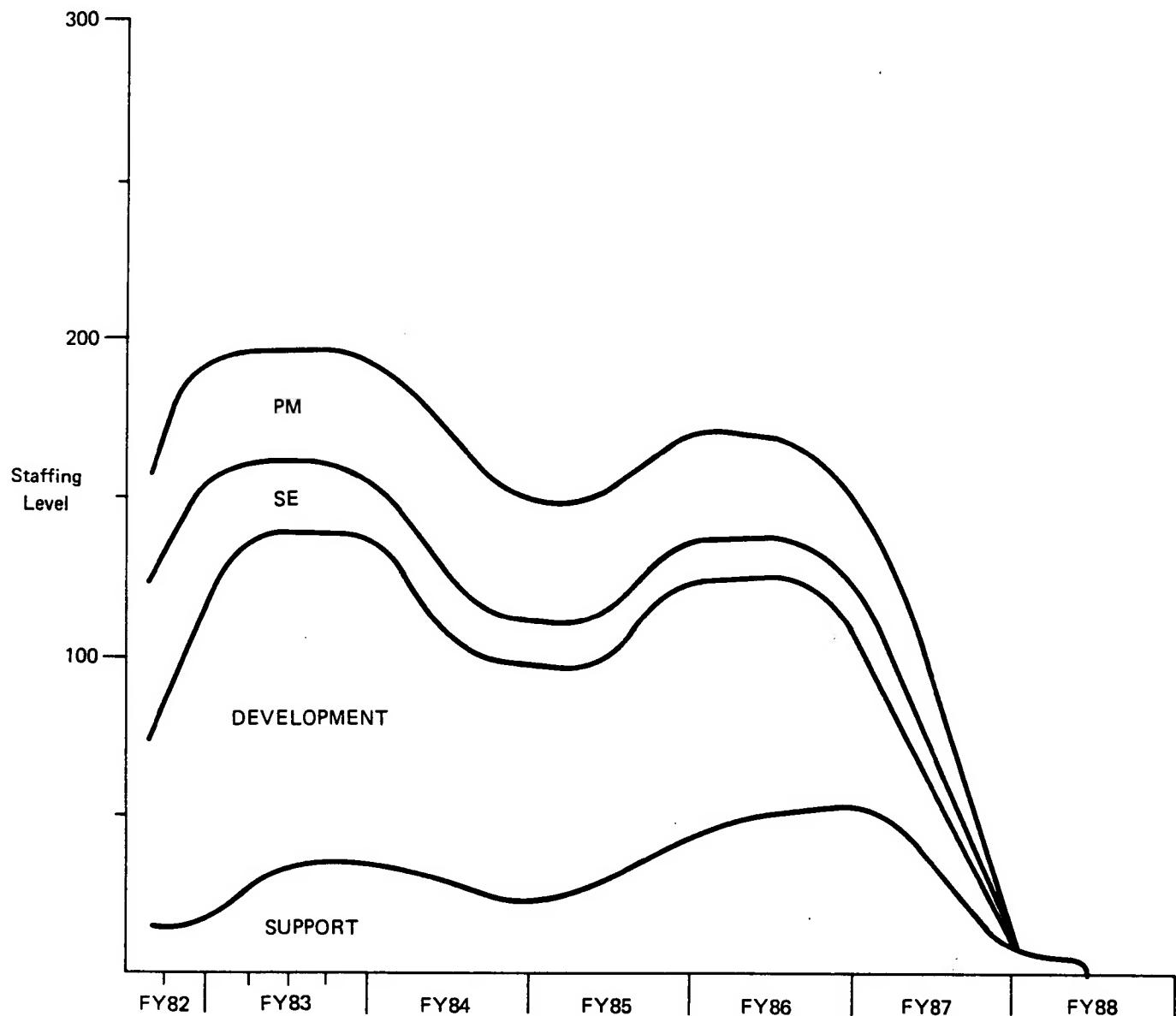


Figure 8.3.2-1. Option C-Staffing Profile

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